SIS2000+ Training Manual

Mass Scheduling

Loader and Loader Rules Examples and Suggestions

Using Course Requests
Using Assign Students
Using the Student Schedule Editor
Using Loader Rules
Using the Loader Options
Using the Master Schedule Editor

Pre-Requisites

All courses need to be assigned to Faculty, selected to the target track, and set-up properly in the Master Schedule Editor. Students need to be enrolled in that track for scheduling and have Course Requests entered that will be used by the Loader. That track must have no Attendance or Mark Reporting entries linked to it yet. The Term Codes table must be properly set-up.

Purpose

Running the Loader can be an involved task. There are numerous things that need to have been set-up in order to reach the point of being able to run the Loader. Those things are listed above. In addition, other steps may be performed before running the Loader as well.

Before running the Loader, you may want to pre-schedule some students by hand if there are cases when you have a listing of students that must absolutely be placed in a particular period or section of a course. The best way to ensure that those students end up in the right place may sometimes be to pre-schedule them. In Course Requests, you can not set a period or section preference because that is basically the same thing as pre-scheduling.

You may also want to establish Loader Rules that will be applied to all Loader attempts before running the Loader. Rules include setting scheduling preferences and course balancing preferences.

On the following pages there are also settings and suggestions that may be followed to 'restrain' the Loader during the initial attempts at scheduling students. It is suggested that you run the Loader in a restrained manner early on in order to test the Master Schedule that has been created and the Course Requests that have been entered.

The Loader can be run any number of times up to the point that schools starts and attendance is taken for that track the first time. Each time it is run, any students you have selected to 'Load' will

lose their previously 'Loaded' courses and be re-scheduled by this run of the Loader, so it is extremely important to make the proper selection on the opening Loader screen.

After the first few runs of the Loader, you may then want to customize the Loader settings to meet your needs. You may choose to allow more alternates to be used, or to use term or teacher preferences, based on Course Requests, for example.

Pre-Scheduling

Pre-Scheduling may or may not be performed, based on what you are trying to accomplish when running the Loader. If you have a listing or group of students that you want to schedule into a particular period or section of a course, you may want to pre-schedule them into that course rather than have the Loader attempt to schedule their request for that course.

If you already know the course, period, day, term, etc. that you want a student to be placed in, you can use pre-scheduling to ensure that that student gets "locked-in" to that section.

Pre-Scheduling refers to using the scheduling applications (Assign Students or Student Schedule) before a Loader run. Use either scheduling application as you normally would. **When scheduling a student into the selected course, choose the term begin date at the Entry Date for the course and choose 'PRE-SCHEDULED' as the Entry Code. 'Pre-Scheduled' MUST BE THE ENTRY CODE SELECTED. If any other code is used, the Loader will not recognize the course as pre-scheduled and it will delete it the next time the Loader is run**.

Course Requests

Assign Students
Assign Students does not use Course Requests when it schedules students. If you have used Assign Students to perform pre-scheduling, and the students pre-scheduled previously had a request for that course, those requests will still appear in the Course Requests application as unscheduled. You will have to go into Course Requests and remove the requests for that course from the appropriate students.

Student Schedule Editor
If you are using Student Schedule to perform pre-scheduling, pick the course to pre-schedule from the list of Course Requests on the left. This will mark the request as pre-scheduled and it will not have to be removed from the Course Requests application.

Some Pre-Scheduling Scenarios:

✍✍You have a list of Special Education students that you want to be placed into a particular period of a course. Since you already know the students to schedule and what period you want to schedule them into, you may use pre-scheduling to make sure that they are placed into the proper period of that course.

✍✍You offer three sections of a Band elective course that students in different grade levels can be scheduled into. The same faculty member teaches all three sections. You want the more experienced students to be placed into the third section of that course. You already know the students to schedule and where to schedule them, so you can use pre-scheduling to ensure that the more experienced students are scheduled into the third section of Band.

✍✍Any time you have a list, or pre-determined roster of students, and you know which section of a course they MUST be scheduled into, pre-scheduling can be a useful tool for you to make sure that your selected students end up exactly where you want them.

Loader Rules Scenarios
You may or may not want to use Loader rules when running the Loader. If you do, you will use this application to define those rules.
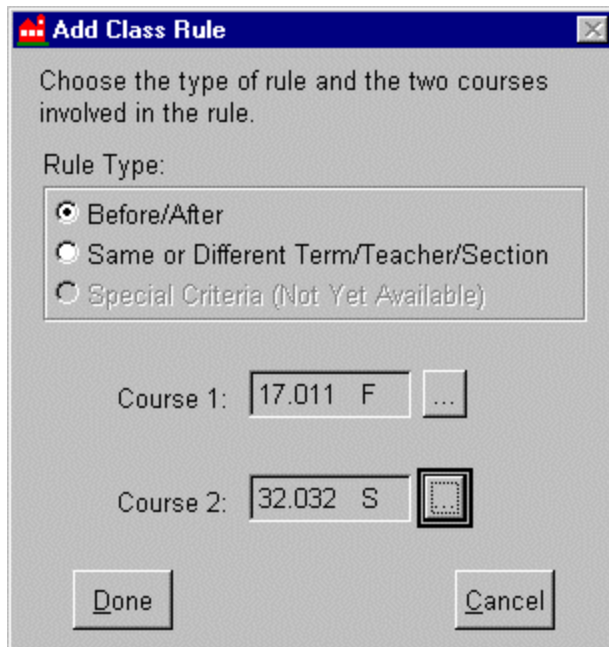
Launch Loader Rules

Select 'Class Rules'
Class Rules defines relationships between **TWO DIFFERENT COURSES** and how the Loader will schedule them, based on those relationships.

There are two types of Class Rules. 'Before/After Rules' where you might define that the Loader schedule Biology before Biology Lab for example. And 'Same or Different Rules' where you might tell the Loader to schedule a student into section 2 of Biology Lab if that student is scheduled into Section 2 of Biology; or schedule the student with any Faculty Member besides Mr. Smith for Biology if the student is scheduled with Mr. Smith for Biology Lab.

✍✍Click ADD

✍✍Choose the type of Class Rule to use and then select Course 1 and Course 2.

Class Rule type and course selection screen.

Before/After Rules

After selecting the two courses, tell the Loader what you want to do with them:

Class Rules Before/After rule definition screen.

Define the Rule:

?? Select a Priority, 1 being the highest priority, the rule the Loader will follow first, followed by 2, 3, etc. The priority numbers must be unique. You can only have one rule with a priority of 1, for example.

?? Set Restraint (choose one):
'Always' do this…and 'Never' do this…are Hard Rules. The Loader must always or must never do what you've defined.

'Try to do' this… and 'Try not to' do this are Soft Rules. The Loader will attempt to follow your rule, but if it has to, it may break the rule to schedule a student successfully.

?? …schedule Class 1 to begin or end (choose one)…

?? …before or after (choose one)…

?? …Class 2 begins or ends (choose one).

Set Student Filter (If Desired)

This will allow you to apply this rule to a specific grade level, gender, or service instead of to everybody.

✍✍Click 'Set Student Filter' and make any desired selections.

Some 'Before and After' Examples:

✍✍Always schedule Class 1 to begin before Class 2 begins.
✍✍Never schedule Class 1 to begin before Class 2 begins.
✍✍For students in grade 10, try to schedule Class 1 to end before Class 2 begins.
✍✍For students in grade 10, whose gender is Female, never try to schedule Class 1 to begin after Class 2 begins.

You will notice that there may be more than one way to define rules that mean the same thing. The settings can be mixed and matched to meet your needs. Use the wording logic that you are most comfortable with.

Same or Different Rules

After selecting the two courses, you can also use same or different rules to tell the Loader what you want to do with them:

Class Rules Same/Different rule definition screen.

Define the Rule:

✍✍ Set Restraint (choose from Always, Never, Try to, or Try not to)…

✍✍ …schedule Class 1 with the same or with a different (choose one)…

✍✍ …term, teacher, or section number (choose one)…

✍✍ …as Class 2.

Set Student Filter (If Desired)

This will allow you to apply this rule to a specific grade level, gender, or service instead of to everybody.

✍✍ Click 'Set Student Filter' and make any desired selections.

Some 'Same or Different' Examples:

✍✍ Always schedule Class 1 with the same teacher as Class 2.
✍✍ Try to schedule Class 1 with a different teacher than Class 2.
✍✍ For students in the 12th grade, never schedule Class 1 in the same term as Class 2.
✍✍ For students in the 9th grade, whose gender is Male, try to schedule Class 1 with the same section number as Class 2.

Again, in the creation of rules, you may see that the same rule can be stated in different ways. Use the syntax that is most comfortable to you.

Viewing / Editing / Deleting Course Rules

You can use the VCR buttons to scroll through the course rules or use the List button to bring up a listing of the rules that have been defined.

If you need to edit a rule, simply select that rule, click Edit, make the necessary changes, and click Save.

To delete a class rule, select that rule, click Delete, and verify that you want to delete that rule.

Select Course Load Balancing

This is used to balance, or spread, **GROUPS OF COURSES** out across terms, based on the settings defined in the Course Load Balancing rules. (i.e. if a student has requested 4 of the courses in the selected group, 2 of them would be scheduled in each semester.) The rules can be defined using previously defined course groups from the Group Editor, or by creating new groups from within this application.

Course Load Balancing screen.

??Click ADD

??Set a Priority for this rule, 1 being the highest. The priority numbers of the Course Load Balancing Rules must also be unique.

??Select restraint (Always or Try to)…

Always is a 'Hard Rule' that the Loader must follow.

'Try to' is a 'Soft Rule' that the Loader will try to follow, but may break if it has to to successfully schedule a student.

??…balance courses in group…

✍✍ …select group…

Click on the '…' button to launch the Group Editor. Either create a new course group or select an existing course group at this time. Select an existing course group by highlighting that group and clicking select. The Course Group Code will be displayed on the Course Load Balancing screen.
Within that Course Group will be the courses that you want to spread out across different terms.

✍✍ Across terms to a maximum difference of '_____' meeting times.

The meeting time here should be the maximum difference of meeting times a student will be allowed to be scheduled into the courses in the group across the different terms.

This deals with meeting times within a cycle, not just periods or sections. (In a single Cycle Day schedule, this is the same as the number of scheduled periods. In a 5 Cycle Day schedule, a class that meets in a particular period Monday through Friday would count as five meeting times – the number of periods * five.)

A value is entered in the rule that defines a "tolerance" for the rule - what is the maximum allowed difference of scheduled meeting times between terms for the rule to be successful. The value entered defines a "tolerance" for the rule - what is the maximum allowed difference. The lower the number the more difficult it will be for the Student Loader to enforce the rule.

  ✍✍ If the difference of meeting times was **ZERO**, that would mean that between terms, the meeting times of the courses in the group must be spread equally between the different terms.

    ✍✍ If you have 1 Cycle Day, and four Courses in your Group, and two terms in your track, the meeting time in each of those terms for the 4 courses would be 1 (because you only have one Cycle Day, each class would have only one meeting time). The difference between the terms would be **ZERO**. Two of the courses (2 meeting times) would be scheduled into one term, and the other two courses (2 meeting times) would be scheduled into the other term.

    ✍✍ If you have 5 Cycle Days, and four Courses in your Group, and two terms in your track, the meeting time in each of those terms for the 4 courses would be 5 (because you have five Cycle Days, each class has 5 meeting times). The difference between the terms will still be **ZERO**. Two of the courses (10 meeting times) will be schedule into one term, and the other two courses (10 meeting times) will be scheduled into the other term.

  ✍✍ If the difference of meeting times were a number other than zero, then you would be allowing the loader to place more classes into one term than another.

    ✍✍ If you have 1 Cycle Day, and four Courses in your Group, and two terms in your track, and set the difference to **TWO**, you would be allowing the Loader to schedule 3 of the Courses in the Group in one term, and 1 of the Courses into to other term. 3 meeting times would occur in one term, 1 meeting time in the other, for a difference of **TWO**.

    ✍✍ If you have 5 Cycle Days, and four Courses in your Group, and two terms in your track, and set the difference to **TEN**, you would also be allowing the Loader to schedule 3 of the Courses in the Group in one term, and 1 of the Courses into the

other term. 15 meeting times would occur in one term (3 courses * 5 Cycle Days), and 5 meeting times in the other (1 course * 5 Cycle Days), for a difference of **TEN**.

??Click Save

Add additional Course Load Balancing Rules as needed.

Other Course Load Balancing Examples:

??You have 4 terms, and 4 requests for PE for your students. PE lasts for one of those four terms (for one quarter). You only want PE to be scheduled once in each term.

  ??Add a rule.

  ??Create a group that contains the PE course. (If you have a different PE course for each grade level, you will need different groups for each grade. Each group will only contain the PE course for one grade.)

  ??Set the maximum difference to ZERO. You want there to be the same number of meeting times of PE in each term. You do not want one term to have more meeting times of PE than another does.

  ??Save. Add another rule in the same manner for each grade level that needs the four PE course requests spread across the four terms.

  ??When the students are schedule with the Loader, they will have the same meeting times of PE across all 4 quarters. (Since they must be spread evenly across the terms, the number of Cycle Days does not matter. A setting of ZERO * 1 Cycle Day = ZERO; and a setting of ZERO * 5 Cycle Days also = ZERO.)

??You have 4 terms, and 2 requests for PE and 2 requests for Band for your students. PE and Band each last for only one quarter. You only want PE and Band to be scheduled once in each term.

  ??Add a rule.

  ??Create a group that contains the PE course AND the Band Course. (If you have different PE and Band courses for each grade level, you will need different groups for each grade. Each group will only contain the PE and Band courses for one grade.)

  ??Set the maximum difference to ZERO. You want there to be the same number of meeting times of PE in each term. You do not want one term to have more meeting times of PE or Band than another does.

  ??Save. Add another rule in the same manner for each grade level that needs the four PE course requests spread across the four terms.

  ??Again, with a setting of ZERO, the Cycle Days do not come into play.

Viewing / Editing / Deleting Course Load Balancing Rules

You can use the VCR buttons to scroll through the course balancing rules or use the List button to bring up a listing of the rules that have been defined.

If you need to edit a rule, simply select that rule, click Edit, make the necessary changes, and click Save.

To delete a course load balancing rule, select that rule, click Delete, and verify that you want to delete that rule.

Suggested Settings for Running the Loader for the First Time

Launch the Loader
Select the students to Load from the initial screen, and from the 'Select' tab as needed.
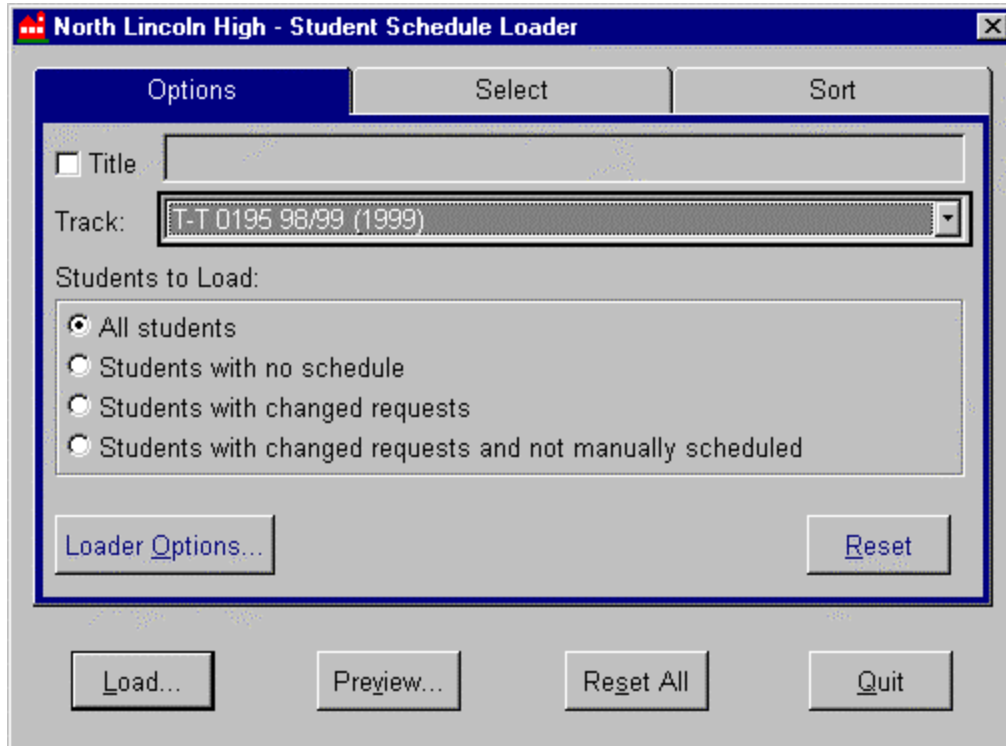
Initial Loader Options screen.

?? Select track – remember that only tracks with a Master Schedule, Course Requests, NO attendance records, and NO mark records can be selected.

?? Select students to Load. NOTE – the Loader will DELETE the schedules that currently exist for the track each time it is run, based on the students selected. **If you PRE-SCHEDULED students into courses and their Entry Code into that course was 'Pre-Scheduled', those courses WILL NOT BE DELETED**, no matter which selection you make on this screen. **If you scheduled a student with any other Entry Code, that schedule record will be deleted.**

?? Also, go to the 'Select' tab if you want to select a particular grade level or a particular group, etc.

?? Or, do not narrow down the selection if you want the only criteria for selected students when running the Loader to be what was selected on the opening screen.

Select 'Loader Options'

Loader Options screen, 1st run.

?? Rename "Default Options" to 1st Run [optional]

?? Turn off "Use Student Alternates"

?? Turn off "Use Global Alternates"

?? If using Teacher Preferences, check it on.

?? If using Term Preferences, check it on.

?? Check "Set Maximum Unscheduled Requests"; Set spinner value to 1

?? Check "Set Overfill Percentage" and set spinner value to "100"

?? Un-check "Use Rescheduling"

?? Save the loader options

Setting for Demographic Balancing

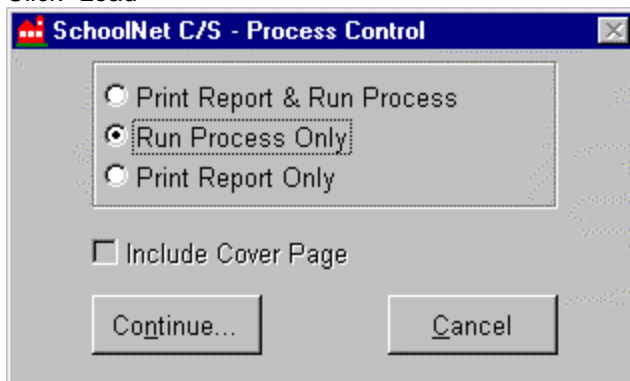Click "Demographic Balancing" from the main options screen:
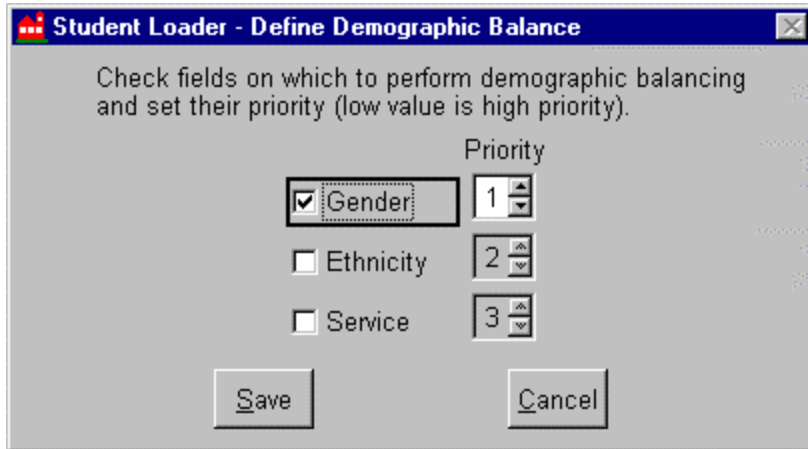
Demographic Balancing selection screen.

?? Make selections as desired
?? Set spinner value to indicate priority

Running the Loader

Click "Load"

Loader Process selection screen.

?? To run the loader simply select "Run Process Only"
?? Select "Continue"

The Loader should then 'Initialize'. It will then run in three 'passes' and the progress of each pass will be displayed with a completion status bar.

The first pass gathers Course Requests. The second 'loads' (schedules) the students. The third pass actually saves the loaded schedules to the database. After the third pass, the first run is complete and student's schedules may be viewed through the Scheduling applications and reports.

Editing the Master Schedule

After the first run of the Loader, it is likely that changes may need to be made to the Master Schedule. Or you may want to run it a second time with different options. Either way, to delete or move a section of a course, you will need to remove the students from that section of the course first. This can easily be done through the Assign Students application.

Select the Faculty Member, select the course section, and 'move' the students out of the section with the left-arrow button. Once students are removed from a section of a course, it can be deleted and/or rearranged in the Master Schedule Editor. Once changes have been made, run the Loader again.

Settings for Running the Loader for the Second Time

Launch the Loader
Select the students to Load from the initial screen, and from the 'Select' tab as needed.

Select "Loader Options"

Loader Options screen, 2nd run.

✍✍Rename "1ˢᵗ Run" to 2nd Run [optional]

✍✍Un-check "Set Maximum Unscheduled Requests"

✍✍Un-check "Set Overfill Percentage"

✍✍Increase Maximum Patterns to 10 million (or other values as needed)

✍✍Check "Use Rescheduling", leave default values in spinners

✍✍Save the loader options

Setting for Demographic Balancing

Select "Demographic Balancing"

✍✍Make selections as desired
✍✍Set spinner value to indicate priority

Running the Loader

Select "Load"

✍✍To run the loader simply select "Run Process Only"
✍✍Select "Continue"

The Loader should then 'Initialize'. It will then run through the same three 'passes' as mentioned above, and the progress of each pass will be displayed with a completion status bar.

Run the Loader and edit the Master Schedule and Course Requests as often as needed to attain an acceptable completion rate of successfully scheduled students. Schedules can be viewed through the Scheduling applications and through the scheduling reports.